

Abstract Submitted  
for the GEC08 Meeting of  
The American Physical Society

**Properties of plasma-liquid system based on the discharge in gas channel with liquid wall at the ultrasonic cavitation** VALERIY CHERNYAK, SERGEY OLSHEWSKII, IRYNA PRYSIAZHNEVYCH, OLENA SOLOMENKO — The influence of the ultrasonic cavitation on the properties of the plasma-liquid system was studied. Discharge in the gas channel formed by airflow immersed into the liquid with microdefects was investigated. Different regimes of the discharge (with and without air) were explored. Optical emission spectroscopy was made of its plasma. Absorption spectra of distilled water after plasma treatment in such system were measured. It was found that presence of ultrasound in the plasma-liquid system during the discharge burning leads to the considerable enhancement of the intensity of main spectral components (hydroxyl band, copper and hydrogen lines). Revealed broadening of  $H_{\alpha}$  line in the emission spectra of plasma of the investigated discharge can be connected with presence of cavitation effect in working liquid caused by applied ultrasound. It was shown that all liquids treated at the presence of ultrasound absorb more then those in case without ultrasound. Treated liquids are unstable in a time.

Valeriy Chernyak

Date submitted: 13 Jun 2008

Electronic form version 1.4